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Leadership in Social Dilemmas: The Effects of Group Identification on Collective Actions to Provide Public Goods

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Two experimental studies investigated the role of group identification in the selection of and cooperation with leaders to manage public good dilemmas. The findings of the 1st study revealed that there was a general preference to select leaders with a legitimate power base (i.e., democratic, elected, and internal leaders), but these preferences were particularly pronounced when people's identification with their group was high rather than low. The 2nd study complemented these findings by showing that when group identification was low, an instrumental leader (i.e., who punishes noncontributing members) was far more efficient than a relational leader (i.e., who builds positive intragroup relations) in raising contributions. Yet, when group identification was high, both leader types appeared to be equally efficient.

The welfare of smaller and larger communities in society depends to a large extent on the amount and quality of services provided to members in the form of schools, community centers, churches, sport, and social clubs. Although everyone perceives the importance of these services, it can be difficult to provide and maintain them because they are in principle accessible to all citizens regardless of their individual contribution. In the social-psychological literature such problems are generally referred to as *social dilemmas* or, more specifically, *public good dilemmas* (Dawes, 1980; Komorita & Parks, 1994; Messick & Brewer, 1983; Stroebe & Frey, 1982; Van Lange, Liebrand, Messick, & Wilke, 1992). Efforts to continue these goods could entail activities to encourage group members to make voluntary donations from time to time. Perhaps more successful in the long run, however, are attempts to collectively create a group structure that enforces regular contributions from group members (Buckley, Burns, & Meeker, 1974; Olson, 1965; Ostrom, 1990; Yamagishi, 1986). A common form of *collective action* is the adoption of a group authority or, particularly in small group dilemmas, a leader to regulate the provision of common goods (Edney, 1980; Messick & Brewer, 1983; Platt, 1973).

Previous research has contributed much to our knowledge about conditions under which groups decide to appoint leaders to manage social dilemmas (Messick et al., 1983; Rutte & Wilke, 1984, 1985; Samuelson, 1991; Samuelson & Messick, 1986, 1995; Samuelson, Messick, Rutte, & Wilke, 1984). It is fair to note, however, that this body of research has only partially addressed the role of leadership in social dilemmas—first, because it assumed that lead-

ers are given complete control over a particular resource or good, whereas in reality groups seldom prefer an autocratic leader; they usually choose leaders that can be controlled to some extent (for recent overviews of the leadership literature, see Bass, 1990, 1997; Hollander, 1985; P. M. Smith, 1996). A second unresolved issue is whether the adoption of a leader actually helps in solving social dilemmas. Previous research has been limited to studying when groups decide to appoint leaders rather than how they might contribute to solving the dilemma (Foddy & Crettenden, 1994; Tyler & Degoe, 1995). Adopting a leader, however, may not always be the most appropriate type of collective action. Indeed, this solution could fail if the attributes of the leader do not correspond well with those of the group or situation at hand (cf. contingency theories of leadership; Fiedler, 1978; Vroom & Jago, 1978).

The current research examines the functioning of leaders in managing public good conflicts by looking at two interrelated forms of collective action. The first study explores when groups select a leader to facilitate the provision of the common good and what leader structures they prefer. The focus of the second study is on how the adoption of a leader affects group members' contribution decisions. It is proposed that these actions are importantly shaped by the strength and quality of the social relationships within the group.

Leadership in Social Dilemmas

When group members wish to appoint a leader to regulate the provision of a common good, they have to make decisions about who they are going to assign as a leader, what the selection method will be, and how much power the leader should be given over group members (Bass, 1990; French & Raven, 1959; Hollander, 1985; P. M. Smith, 1996).

In terms of power position, groups could decide on a leader with *autocratic* power, who has the freedom to do whatever he or she considers necessary to manage the good, including determining how much and which group members should contribute. Although this leader structure has been investigated frequently in social dilemma research (e.g., Messick et al., 1983; Rutte & Wilke, 1984,

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1985; Samuelson et al., 1984), it is actually rarely found outside the laboratory (i.e., except perhaps in religious cults; Hollander, 1985). Groups usually assign *democratic* leaders, who can exercise some control over group members but are accountable for the decisions they make and can be replaced when needed (Bass, 1990).

In terms of the selection method, there are broadly two distinct ways in which the leader can be assigned to the group. The leader can either be *appointed* by an external authority or *elected* by the group members themselves (e.g., by means of a voting procedure; Hollander & Julian, 1970).

Finally, in helping to manage a dilemma situation, group members could choose a leader from inside the group who shares the group attributes, norms, and values, or they could appoint somebody from outside. Previous social dilemma research has focused exclusively on the adoption of *internal* leaders (Messick et al., 1983; Samuelson et al., 1984), but groups might under some conditions prefer to appoint an *external* leader (Ostrom, 1990).

Antecedents of Choosing a Leader

When do group members wish to change the structure of the dilemma, for example, by appointing a group leader to manage a common good conflict? The extant experimental literature on collective action in social dilemmas suggests that people's desire for structural change is primarily instrumentally motivated (e.g., Messick et al., 1983; Rutte & Wilke, 1985; Samuelson & Messick, 1995; Samuelson et al., 1984; Stroebe & Frey, 1982; Yamagishi, 1986, 1988). For example, group members might decide to move to a hierarchical group structure when the group has repeatedly failed to produce the desired good through voluntary contributions.¹ We believe, however, that a purely instrumental perspective is too narrow to account for the emergence of collective actions within groups.

First, previous research does not give much insight into the kind of leaders or authorities that groups are likely to adopt when faced with a public good problem. If group members are concerned solely about improving the group's outcomes, they would not hesitate to give up their decisional freedom to an autocratic leader in order to secure the good. Yet, there is ample evidence from both experimental and field research to suggest that, even in crisis situations, group members wish to keep some personal control over their contribution decisions (Rutte & Wilke, 1984, 1985; Samuelson, 1993; Tyler & Degoe, 1995).

Moreover, previous studies have generally failed to address the issue of what happens to the dilemma once a collective structure is implemented (i.e., how it influences the degree of cooperation; cf. Van Vugt, 1997; Van Vugt, Van Lange, Meertens, & Joireman, 1996).² By choosing an autocratic leader, which was given as the option in these experiments, the dilemma structure is effectively eliminated because group members will have no freedom to decide whether to contribute or not. Outside the laboratory, however, autocratic leadership is rare, and leaders are usually given only limited power to influence group members. Hence, group members still have to decide whether they wish to cooperate with a particular leader in solving the dilemma.

A Relational Model of Collective Action

The fundamental assumption of the current research is that collective actions in social dilemmas (i.e., to adopt and cooperate with a leader in providing a common good) are importantly shaped by relational motives in addition to instrumental ones. Following the *group-value model* (Tyler & Lind, 1992), we propose that group members evaluate leaders not only in terms of the immediate outcomes they produce for the group but also in terms of the quality of their relationship with group members. For example, does the leader treat group members with dignity and respect, and is he or she able to promote group identification and trust between group members? According to the group-value model, these relational aspects are important because they contribute to the group's status and the individual standing within the group (i.e., pride and respect; H. J. Smith & Tyler, 1997; Tyler, Degoe, & Smith, 1996).

These impressions determine perceptions about the leader's *legitimacy* (French & Raven, 1959; Tyler & Degoe, 1995; Tyler & Lind, 1992), and they are influenced by the way a leader is assigned to a group, by the power position, and by the personal attributes and qualities of the leader (Bass, 1990; Hollander, 1985; Levine & Moreland, 1990). That is, the leader's legitimacy will be greater to the extent that group members can exert influence on the leader's decisions (i.e., the leader is a democratic leader; Thibaut & Walker, 1975), can replace him or her when necessary (i.e., the leader is an elected leader; Hollander, 1985; Hollander & Julian, 1970), and perceive some similarity between the leader and group in terms of shared attributes and values (i.e., the leader is a *prototypical* leader; Hains, Hogg, & Duck, 1997; Hogg, 1996). Thus, if relational concerns play a role in determining group members' choice of a leader, then we would expect groups to have a consistent preference for adopting leaders that are legitimate. Accordingly, in managing a public good crisis, groups should prefer a democratic over an autocratic leader, an elected over an appointed leader, and a leader from inside over one from outside the social group.

Group Identification and the Selection of Leaders

An important implication of our relational model is that collective decisions should be moderated by the strength and importance of the social ties within the group. Traditionally, collective action research has been relatively mute about social and group identification processes (cf. Kramer & Goldman, 1995; Tyler & Degoe, 1995). Yet, there are good reasons to believe that the strength of group identification plays a major role in determining the selection of and cooperation with a leader in managing a public good.

¹ Olson (1965) and Yamagishi (1986) have argued convincingly that the creation of an authority structure, in fact, constitutes a social dilemma of the second kind. It serves people's short-term self-interest not to contribute to the establishment of an authority, but if none or only a few group members cooperate, there will be no authority in place to monitor the good, and therefore the good may fail to be provided, leaving everyone worse off.

² An exception is the work on the implementation of sanctioning systems in public good dilemmas (Yamagishi, 1986, 1988; Yamagishi & Sato, 1986).

First, individuals are more likely to contribute voluntarily to the provision of a good when their identification with the group is high (e.g., Brewer & Kramer, 1986; Brewer & Schneider, 1990; Kramer & Brewer, 1984). The extent of individual cooperation tends to be higher among high-identifying individuals, either because they place greater value in the good itself (De Cremer & Van Vugt, in press; Kerr, 1996), because they have greater trust in the cooperative intentions of fellow group members (Brann & Foddy, 1987; Brewer & Kramer, 1986; Kramer & Brewer, 1984), or both. Thus, from an instrumental perspective, high-identifying group members might perceive it as unnecessary to appoint a leader because of their expectation that the good will be provided by voluntary contributions from group members.

In addition, however, we believe that people's motives for adopting a leader may fulfill important social and relational needs. For example, groups may decide to appoint leaders to highlight their group unity, to stress the importance of group membership, or to accentuate the differences between their group and other groups (Hogg, 1996; P. M. Smith & Fritz, 1987). These motives will have important implications for the kind of leader groups wish to adopt to manage a collective good. When group members' identification with their group is low, their primary concern will be to ensure the public good is provided rather than to try to maintain good relationships with other group members. Accordingly, they should prefer a leader with a strong power position to enforce contributions from uncooperative group members. Moreover, because they lack trust in their fellow group members (e.g., Kramer & Brewer, 1984; Messick & Brewer, 1983), they should prefer to appoint a leader from outside their own group, and preferably somebody who is appointed rather than elected by their uncooperative fellow group members.

Yet, when people strongly identify with their group, they will be focused not only on the provision of the good itself but also on how the leader will affect the relationships within the group. Thus, they will seek a leader who is able to protect the group's status and enhance the individual's standing within the group—these are attributes from which people derive self-esteem in groups according to the group-value model (Tyler & Lind, 1992). These relational needs are probably best fulfilled by a leader with a legitimate power base, in other words, one who shares the group values, whose actions can be influenced and controlled by group members, and who can be replaced whenever it is considered necessary.

The above thus gives rise to the following hypotheses about the effects of group identification on individual and collective actions in public good dilemmas. First, it is expected that when group identification is high, group members will make greater voluntary contributions (Hypothesis 1) and will have a weaker preference for collectively adopting a leader (Hypothesis 2). Second, consistent with most (but certainly not all) previous research (Messick et al., 1983; Samuelson et al., 1984), the preference for adopting a leader should be greater among groups that have previously failed to provide the good through voluntary contributions (Hypothesis 3). Third, in choosing between different leader structures, group members will generally favor a legitimate leader, which culminates in a preference for a democratic rather than autocratic leader, an elected rather than appointed leader, and a leader from inside (internal leader) rather than outside the group (external leader; Hypothesis 4a). Finally, in line with the group-value model, the preferences for legitimate leaders are likely to be stronger among

members whose group identification is high rather than low (Hypothesis 4b).

Differentiating Between Instrumental and Relational Needs Underlying Collective Action

Above we have offered two mutually nonexclusive explanations for why groups engage in collective action, an instrumental and a relational interpretation. Is it possible to differentiate between these two models of collective action? First, we could look at how the group members' expectation about their group's performance affects their preferences for choosing a leader. The instrumental approach predicts that when their group has repeatedly failed to provide the good by voluntary contributions, group members will opt for the adoption of a leader (see Hypothesis 3). Moreover, after group failure, they should prefer a leader with a strong power base (i.e., an autocratic leader), who is appointed externally rather than elected by fellow group members and is preferably someone who is not associated with the unsuccessful group, because this might increase the expectation of obtaining the good the next time. Alternatively, a relational model would predict that, regardless of the group's previous failure to obtain the good, a democratic, elected, and internal group leader will be preferred above an autocratic, appointed, and external leader (Hypothesis 4c).

Second, the relative importance of instrumental versus relational needs in collective action can be further assessed by looking at how groups actually perform under a leader structure that represents either one of these motives. First, on the basis of an instrumental model of collective action, we would expect group members' contributions to rise with an *instrumental* leader, a leader who can penalize noncontributing group members (Hypothesis 5a).

Yet, if, as suggested by the group-value model (Tyler & Lind, 1992), relational concerns also play a role in people's decision to cooperate with a leader, then we would expect contributions to rise with a leader without any instrumental power, but one that promotes good intragroup relations—for example, by providing encouragement and building trust and by treating group members fairly and respectfully. However, we would expect this *relational* leader to have an impact only in groups in which group members attach importance to social connections with each other. When they do not assign much weight to the quality of social relationships, their decisions should not be influenced by a relational leader. This leads to the prediction that when group identification is high, a relational leader is likely to be as effective as an instrumental leader in raising contributions from group members; however, when identification with the group is low, an instrumental leader is likely to be far more effective than a relational leader (Hypothesis 5b).

Finally, in line with the group-value model (Tyler & Lind, 1992), it is hypothesized that a relational (rather than an instrumental) leader will have a positive effect on the self-esteem of group members, in particular, among members whose group identification is high rather than low (Hypothesis 5c).

Study 1

The main purpose of Study 1 was to look at the moderating effects of group identification on the selection of leaders in a social

dilemma situation (i.e., Hypotheses 1 to 4). To test our hypotheses, we used a traditional step-level public goods paradigm (Van de Kragt, Orbell, & Dawes, 1983), whereby experimentally created groups can provide a good for themselves if a sufficient number of group members are willing to contribute their endowment. In this task environment, we manipulated the level of group identification—by highlighting the comparisons with referent social groups—as well as the number of contributors needed to provide the bonus (i.e., provision point).³ Moreover, after the first contribution session, false feedback was provided about the success or failure of the group in providing the bonus. On receiving this information, participants could indicate their preference for a leader structure to regulate the provision of the bonus in a second (and final) contribution session.

Method

Participants and design. Participants in this computer-led experiment were 96 undergraduate psychology students from Southampton University (i.e., 62 women, 33 men, and one gender-anonymous participant), ages 18 to 22. For each experimental session, 6 people were invited to the laboratory simultaneously. Within each session they were randomly assigned to one of eight experimental conditions, following a 2 (group identification: high vs. low) $\times 2$ (provision point: high vs. low) $\times 2$ (feedback: success vs. failure) between-subjects design.

Procedure. On arrival at the laboratory, each participant was placed in a separate experimental cubicle where he or she was seated in front of a computer screen. All information was transferred via the computer. The experiment started with a brief introduction on how to use the computer. Thereafter, participants were informed about the nature of the study. It was explained that they were going to play an investment game with their group, the structure of which was said to resemble a diversity of investment problems in modern society (e.g., the purchase of a television license). At the start of the game, each group member would receive an endowment of £3 (approximately \$5), which they could either keep for themselves or invest in a fund in order to acquire a group bonus of £30 (i.e., £5 per person). It was explained that a minimum number of contributors would be needed to achieve the group bonus (for a similar procedure, see Van de Kragt et al., 1983). Furthermore, it was explicitly stated that if the group succeeded in acquiring the £30 bonus, then each of the 6 group members would receive £5, regardless of whether they made a contribution. However, if the group failed, then only those who invested would lose their endowment.

As an additional incentive, we instructed participants that on completion of the entire study a lottery would be conducted among the participating groups, and one group would receive payment for their participation.

Manipulation of provision point. In half of the experimental conditions it was explained that at least 5 out of 6 group members needed to invest their endowment in order to acquire the group bonus (*high provision point*). In the other conditions it was stated that at least 2 people needed to contribute their endowment (*low provision point*).

Manipulation of group identification. After these instructions, participants received information about the context of the study. First, they were told that the experiment was being conducted simultaneously at various universities in the south of England (i.e., Reading, Bristol, Portsmouth, Exeter, Southampton). These universities were chosen because they were all geographically close to Southampton University and were fairly similar in size and entry requirements for undergraduate study (i.e., in obtaining a university place Southampton University students generally have also applied to these universities). We thus assumed this would provide a meaningful categorization for our participants. Subsequently, half of the participants were explicitly told that the aim of the experiment was to compare how well students from Southampton University were doing in

these situations compared with students from the other universities (high-identification condition). The other half were told that the primary aim of the study was to examine how well students in general were doing in these kind of situations (low-identification condition). This manipulation was believed to enhance or reduce the salience of participants' university membership. A similar kind of manipulation has been used with success in previous research (Kramer & Brewer, 1984; Experiments 1 and 2).

The group identification manipulation was successful in the present study. The manipulation check ("How much do you identify with your group?"; 1 = *not at all*, 7 = *very much*) indicated participants in the high- (vs. low-) identification groups indeed identified more strongly with their group ($M_s = 4.69$ vs. 3.87 ; $SD_s = 1.54$ and 1.70), $F(1, 94) = 6.14$, $p < .01$.

Contribution decisions. After participants read these instructions and answered questions referring to them, they were asked if they wished to contribute their endowment to the group (1 = *yes*, 2 = *no*).

Feedback manipulation. Subsequently, participants were informed about the group outcome. In half of the experimental conditions, participants were informed that their group had failed to obtain the bonus (failure condition). Accordingly, those who had invested their endowment had lost it. In the other conditions, the group was successful in obtaining the bonus (success condition) and every member was promised a bonus of £5.

Opportunity to choose a leader. Participants were then told that they would play a second round of the investment game. It was explained to them that in the real world, groups facing a similar kind of problem sometimes adopted a group leader to ensure the provision of the collective good. Subsequently, participants were asked to indicate whether they preferred to appoint a group leader (7 = *very strong preference for leader*) or maintain the status quo (1 = *very strong preference for current structure*) to provide the good in the next round.

Thereafter, they were told that all groups in this study would be allocated a group leader in the second round, but that each group's members could decide what kind of leader they would like to have. Accordingly, group members received descriptions of six different leader types, and they were asked to select which of these leaders they wanted to be assigned to the group in the second round. First, they indicated their preference for each of the six leader types separately (1 = *no preference at all*, 7 = *very strong preference*). It was explained that the leader with the highest overall group rating would be assigned to the group. Subsequently, they were asked to make several choices between two antagonistic leader types on a bipolar 7-point scale (e.g., 1 = *very strong preference for a democratic leader*, 7 = *very strong preference for an autocratic leader*).

Democratic versus autocratic leader. The democratic group leader was described as "a leader who will ask each member of your group informally about their intended contribution decision, and then make a decision [about] which group members should contribute their endowment." In contrast, the autocratic leader was portrayed as "a leader who decides for the group which group members should contribute their endowment."

Elected versus appointed leader. The person to serve as the group leader was someone who would either be "chosen by the majority of the group members via a vote" (elected) or "appointed by the experimenter" (appointed).

Internal versus external leader. The internal leader was described as "a person from Southampton University" and the external as "a person from one of the other universities participating in this experiment."

³ There were no a priori expectations about the influence of provision point on collective actions. Previous research had revealed that individual actions in public good dilemmas are shaped by the difficulty of getting the bonus (Dawes, Orbell, Simmons, & Van der Kragt, 1986), and therefore we introduced the task difficulty as an exploratory factor in the design of Study 1.

Debriefing. After these questions the experiment was interrupted. Participants were carefully debriefed about the purpose of the research, and they were thanked for their participation. It was explained that, after the entire study was completed, a lottery would determine which group would receive a prize of £48 (i.e., approximately \$72), which corresponded to the sum of the group's endowments and the group bonus. This sum would be divided equally among the 6 members (£8 per person) and would be sent by check to their home.

Results and Discussion

Contribution decisions. A crosstabulation analysis was performed to examine the impact of group identification on contribution decisions. Consistent with Hypothesis 1, this analysis revealed that there was a greater proportion of contributors in the high- (88%) than low-identification conditions (70%), $\chi^2(1, N = 96) = 4.47, p < .05$. This effect was found to be independent of the provision point to obtain the bonus, $\chi^2(1, N = 96) < 1$.⁴

Preference for leader versus the status quo. To test Hypothesis 2, we analyzed the preference for (1) maintaining the status quo versus (7) adopting a leader in an analysis of variance (ANOVA) with the full factorial design: 2 (group identification: high vs. low) \times 2 (provision point: high vs. low) \times 2 (feedback: success vs. failure).

First, this analysis revealed a main effect for group identification, $F(1, 92) = 8.41, p < .01$. Consistent with Hypothesis 2, the means showed that people in the high-identification condition ($M = 3.78, SD = 1.83$) exhibited a weaker preference for adopting a leader than people in the low-identification condition ($M = 4.74, SD = 1.91$). This effect was not qualified by information about the provision point or by the group's success or failure to obtain the good (both F s < 1). Second, a main effect was found for feedback, $F(1, 92) = 24.30, p < .001$, which is consistent with Hypothesis 3. Individuals were found to exhibit a stronger preference for adopting a leader when the group had previously failed to obtain the bonus ($M = 5.08, SD = 1.57$) than when it had been successful ($M = 3.78, SD = 1.82$). Finally, this analysis revealed no further significant main or interaction effects between the experimental factors in the design (i.e., all F s < 1).

Choosing between different leader structures. In Hypotheses 4a to 4c we made predictions regarding the kind of leaders that group members would select to help the group provide the good in the second contribution session.

First, we predicted that in choosing between different leader structures group members would favor leaders with a legitimate power base (Hypothesis 4a). To test this hypothesis, we conducted a planned comparison test, whereby we contrasted the preference ratings given to the three leader types considered to be more legitimate (democratic, elected, internal) with those considered to be less legitimate (autocratic, appointed, external). This analysis revealed a significant difference between the two sets of leaders, $F(1, 95) = 153.51, p < .001$, with the more legitimate leaders being strongly preferred above the less legitimate leaders (M s = 5.20 vs. 2.95, SD s = 1.37 and 1.54).

Subsequently, we performed pairwise comparisons between each set of leader ratings, using the Bonferroni correction method to correct for capitalization of chance ($\alpha = .05/14$). The results are displayed in Table 1. This table shows that participants drew a distinction between two groups of leaders, whereby they clearly favored democratic, elected, and internal leaders above autocratic,

Table 1

Preference Ratings for Various Leader Structures

Leader structure	<i>M</i>	<i>SD</i>
Democratic leader	5.51 _a	1.46
Elected leader	5.15 _a	1.36
Internal leader	4.94 _a	1.28
Appointed leader	3.22 _b	1.63
External leader	3.08 _b	1.37
Autocratic leader	2.55 _b	1.62

Note. Ratings were made on a 7-point scale (1 = no preference for leader type, 7 = very strong preference for leader type). Means with a different subscript differ significantly at $p < .001$.

appointed, and external leaders (i.e., all comparisons between ratings given to the former vs. latter types of leaders were statistically significant, $p < .001$). The low mean preferences for the autocratic, appointed, and external leaders indicate that they, in fact, dislike such leader structures (i.e., these ratings differ significantly from 4, the midpoint of the judgment scale, $p < .05$). Hence, in accordance with our hypothesis groups clearly prefer to adopt leaders with a legitimate power base (i.e., in terms of position, selection method, and type of power).

Second, the expectation was that preference for a legitimate leader structure would be highest in high-identification groups (Hypothesis 4b). To test this hypothesis, we conducted a multivariate analysis of variance on the ratings between two contrasting leader types (democratic [1] vs. autocratic [7], elected [1] vs. appointed [7], internal [1] vs. external leader [7]), using the full factorial design.

The multivariate analysis revealed a significant multivariate effect for group identification, $F(3, 86) = 6.32, p < .001$. Univariate effects associated with this multivariate effect showed significant differences between two of three contrasting leader structures, elected versus appointed leader, $F(1, 88) = 9.51, p < .01$, and internal versus external leader, $F(1, 88) = 10.76, p < .001$. No difference was found for the comparison between a democratic versus autocratic leader, $F(1, 88) < 1$.

The means associated with these effects generally support Hypothesis 4b. Among the high-identification groups there was a relatively stronger preference for selecting an elected rather than appointed leader ($M = 2.51, SD = 1.78$) than among the low-identification groups ($M = 3.47, SD = 1.24$). Also, in the high-identification groups a greater preference was found for an internal (vs. external) leader ($M = 2.59, SD = 1.29$) than in the low-identification groups ($M = 3.51, SD = 1.44$). But, both the high- and low-identification groups displayed an equally strong preference for choosing a democratic rather than an autocratic leader (M s = 2.53 vs. 2.64, SD s = 1.67 and 1.81; *ns*).

Are these preferences shaped merely by relational concerns or by concerns about the group's outcomes? To explore this question, we examined how the leader preferences were affected by knowledge about the previous group's failure to obtain the good. In support of Hypothesis 4c, it was found that the preferences for a democratic (vs. autocratic), an elected (vs. appointed), and an internal (vs. external) leader were not significantly different be-

⁴ A proper loglinear analysis of these data revealed identical results.

tween the two feedback conditions, $F(3, 86) < 1$. There was also no evidence for an interaction between feedback and group identification, $F(3, 86) < 1$.

Taken together, these results provide good support for our predictions that group identification influences both individual actions (i.e., the contribution decision; Hypothesis 1) and collective actions (i.e., adopting a leader; Hypothesis 2) in public good dilemmas. Moreover, replicating previous research, the preference for adopting a leader was higher when groups had previously failed to obtain the good (Hypothesis 3). Finally, in accordance with a relational model, in choosing between different leader structures there appears to be a consistent preference to adopt a leader with a legitimate power base (a democratic, elected, internal leader; Hypothesis 4a), but this preference is particularly strong among people in the high-identification groups (Hypothesis 4b; with an exception for an autocratic leader who is disliked by all groups). Finally, these leader preferences are not influenced by the expected poor group outcomes (Hypothesis 4c).

Study 2

The main purpose of the second study was to investigate a second aspect of collective action by examining how the implementation of a leader would affect the contribution decisions of group members in providing the common good. To differentiate between instrumental and relational motives, we examined how the contribution levels within these groups would vary with leaders with a different power base (i.e., with an instrumental vs. a relational leader; Hypothesis 5a). Moreover, we tested the effectiveness of each of these leader types in promoting cooperation in individuals differing in strength of group identification (Hypothesis 5b) and examined how these leaders would affect the self-esteem of group members (Hypothesis 5c).

To examine these hypotheses, we used a public goods task similar to the one used in Study 1 but with a few modifications. First, the contribution decisions were made continuous rather than dichotomous in order to detect finer changes in individuals' contribution behavior as a result of the implementation of a leader structure. Second, the task was extended to eight contribution sessions, the first block of four sessions without and the second block of four sessions with a group leader. Third, to justify the implementation of a group leader, the group members received consistently negative feedback about the group's performance in previous contribution sessions. Fourth and finally, on the basis of Study 1 there was no reason to expect behavioral differences as a result of the provision point. Therefore, in Study 2 the provision point of the public good was fixed at an intermediate level of task difficulty.

Method

Participants and design. Ninety-three undergraduate Southampton University students participated in Study 2 (i.e., 59 women and 34 men, ages 18 to 25). Six participants were invited simultaneously to the laboratory, and each participant was randomly assigned to one of the experimental conditions, using a 2 (group identification: high vs. low) \times 2 (type of leader: instrumental vs. relational) \times 8 (contribution sessions) factorial design. The first two were between-subjects factors, whereas the third was a within-subject factor. The cell sizes varied from 22 to 24 persons per condition.

Procedure. The experimental procedure was fairly similar to the one used in Study 1. With regard to the public goods task, it was explained that there would be eight contribution sessions and that for each session each group member would receive an endowment of £3. A group bonus of £30 could be earned if the group as a whole contributed a total of £12. The participants were free to choose any amount between 0 and 300 pence (£1 = 100 pence) to help the group provide the bonus. It was explained that, although we could not afford to pay every participant what he or she would earn in the experiment, each participant would receive a bonus on successful completion of the study. This was presumed to provide an incentive that would enhance participants' motivation in doing the task.

After explaining these rules, participants were asked some questions to check their understanding of the task. After participants answered them, the manipulation of group identification was introduced.

Manipulation of group identification. The manipulation of group identification was the same as the one used in Study 1. Participants were informed that the research was being conducted simultaneously at different universities in the South of England. Subsequently, in the high-identification condition participants were told that the contribution decisions of Southampton University students would be compared with those of student groups from other universities. In the low-identification condition participants were told that the experiment was concerned with examining how students generally behave in such situations.

Manipulation check. Before starting with the first contribution session, four questions were asked to check the identification manipulation: "How much do you identify yourself with this group?" "Do you think that the members of this group are well suited to each other?" "Are you glad to belong to this group?" and "Do you consider yourself as belonging to this group?" Responses were made on a 7-point scale (1 = *not at all*, 7 = *very much so*). These four questions were averaged into a single identification score (Cronbach's $\alpha = .81$).

A one-way ANOVA with group identification as the sole factor on the average identification score revealed a significant effect for group identification, $F(1, 91) = 21.16$, $p < .001$, showing that participants in the high-identification groups identified more strongly with their group than participants in the low-identification groups ($M_s = 4.09$ vs. 3.20 , $SD_s = 0.97$ and 0.91).

Contribution Sessions 1–4. After these instructions, the first block of four contribution sessions started, and participants indicated for each how much of their endowment they were willing to contribute (i.e., any amount between 0 and 300 pence). At the end of each session they received consistent feedback that their group had failed to obtain the bonus in the previous session. Before the fourth contribution session it was announced that a leader could be appointed to the group if it continued to fail to provide the good. After this session it was indeed confirmed to group members that a leader had been appointed to regulate contributions in the second block of sessions (5–8). This leader was somebody from outside the group of 6 who was helping the experimenter during the experimental sessions. Participants were told that this person would monitor the group member's decisions and would address the group via computer messages. At this point, the leader introduced himself to the group through a mail message on the screen:

Hi, I have been asked by the experimental officer to monitor your group in solving the task. On my computer screen I can see the contributions made by each of the members of your group. Hence, I am fully informed about what is happening in your group.

Manipulation of leader structure. Subsequently, in half of the experimental conditions participants were confronted with a leader with instrumental power who would try to regulate contributions by penalizing noncooperative members (instrumental leader condition). This leader described his task as follows:

I have to make sure your group will receive the bonus in the forthcoming sessions. However, I do not believe that each group member

will contribute enough voluntarily. Hence, in the next sessions I will not hesitate to penalize the least contributing member. That is, in each session the group member contributing the least amount of the 300 pence endowment will get a fine of 220 pence. This amount will be subtracted from the amount of money he or she will have earned at the end of the sessions. Because people who do not contribute affect the group's success, I think a punishment is the best thing to ensure they will contribute enough next time.

In contrast, in the other conditions participants were confronted with a leader who tried to regulate the provision of the good by promoting good relations within the group (relational leader condition). The following introduction was given by the leader:

I have to make sure your group will receive the bonus in the forthcoming sessions. I trust each of you to contribute enough of your endowment to the provision of the good. If the group fails, however, I will send an encouraging message to noncooperative group members to ask them to contribute sufficiently the next time. I will not punish anyone, but I will try to give you support and explain things if necessary. You can trust me that everyone will be treated equally and with respect.

Finally, the instructions of both leaders ended with the following: "Each time your group is successful, I will make sure that each individual receives the bonus. When all contribution sessions are over, each group member will receive the amount of money he or she is entitled to."

Contribution Sessions 5–8. After the message from the leader, the second set of contribution sessions started. Similar to the previous sessions, the group members were asked to contribute any amount between 0 and 300 pence. After each session, the group members received feedback from the leader that the group had failed in securing the bonus. These messages differed between the two leader conditions, and they were slightly reworded for each contribution session. For example, after Session 6 the instrumental leader sent the following message to each group member:

Your group as a whole contributed less than 1200 pence or £12 in the previous session. Therefore I cannot give you the group bonus of £30. I will have to punish the least contributing group member within the group. This person will pay a fine of 220 pence, which will be subtracted from his or her earnings at the end of the experiment. Hopefully, this will encourage group members to contribute more the next time.

In Session 6 the following feedback was given by the relational leader:

Your group as a whole contributed less than 1200 pence or £12 in the previous session. Therefore I cannot give you the group bonus of £30. I trust each of you to contribute enough next time. I do not believe that anyone in this group is greedy, but please try to increase your contributions because it will help the group. Hopefully, the outcome will be different in the next round.

Finally, after the eight contribution sessions the experiment was interrupted, and participants were given a final set of questions to answer. They were then debriefed about the purpose of the experiment and received £2 for their participation. They were thanked for their cooperation and dismissed.

Self-esteem. Self-esteem was measured by three situation-specific items taken from the Rosenberg (1979) Self-Esteem Scale: "After having participated in these contribution sessions do you feel sure of yourself?" "... do you feel satisfied with yourself?" "... do you feel proud of what you have accomplished?" The responses, made on a 7-point scale (1 = *not at all*, 7 = *very much so*), were combined into a single self-esteem score (Cronbach's $\alpha = .78$).

Legitimacy of leader. Finally, we examined the perceived legitimacy

of the two leaders by measuring two interrelated aspects of legitimacy, the leader's trustworthiness and group members' identification with the leader (i.e., adopted from Tyler & Degoe, 1995).

A first set of questions addressed group members' trust in the leader for influencing the group members' contributions: "How trustworthy do you consider this leader?" "How competent is this leader?" "To what extent does this leader respect the group members?" "How respectfully does this leader treat you?" "How honest do you think this leader is?" "To what extent do you think the leader trusts the group?"

Second, several questions addressed how much group members identified with their leader: "How much do you identify with this leader?" "Would you feel good if you were described as someone who's similar to this group leader?" "Would you be proud to be identified with this leader?" "Do you think that this leader and you are well-suited to each other?" "Do you think that you have more in common with this leader than with any other leader?" "How similar is this leader to you?" All of these questions were answered on a 7-point scale (1 = *not at all*, 7 = *very much*).

A confirmatory factor analysis on these legitimacy measurements revealed that the item structure was best represented by a single underlying factor (confirmatory factor index [CFI] = .94) rather than by a model with two separate factors (CFI = .88); a CFI above .90 is generally regarded as a sign of good fit. Hence, a single legitimacy scale was created by averaging the scores on all individual items. This scale had a good interitem reliability (Cronbach's $\alpha = .92$).

To examine the perceived legitimacy of both leader types, we conducted an ANOVA on the legitimacy score, using a 2 (group identification) \times 2 (type of leader) design. This analysis revealed a main effect for leader type, $F(1, 89) = 7.72, p < .001$, which showed that a relational leader was viewed to be more legitimate ($M = 4.35, SD = 0.85$) than an instrumental leader ($M = 3.78, SD = 1.14$). These legitimacy ratings were not further influenced by the level of group identification, $F(1, 89) = 1.72, p = .20$, nor by the interaction between leader type and group identification, $F(1, 89) < 1$.

Results and Discussion

Contribution decisions. For our main analyses, we grouped the contribution sessions with a leader (Sessions 5–8) together into one block and compared them with the block of sessions without a leader (Sessions 1–4). Accordingly, participants' contribution decisions were analyzed in a 2 (group identification: high vs. low) \times 2 (type of leader: instrumental vs. relational) \times 2 (sessions: without vs. with leader) factorial design ANOVA with repeated measures on the third factor.⁵

Hypothesis 1 predicted that group identification would have a beneficial effect on the level of contributions made within groups. Consistent with this hypothesis (and similar to the result in Study 1), a main effect was found for group identification, $F(1, 89) = 8.76, p < .005$, indicating that in the high-identification groups

⁵ A preliminary analysis including the eight individual contribution sessions as an additional within-subject grouping variable yielded similar results as when the sessions were grouped into two blocks of four (i.e., without and with leader). Therefore, we report only the results of the latter analysis in the main text. The original analysis, however, revealed one additional main effect for sessions, $F(3, 267) = 7.22, p < .001$, but no evidence for any significant interactions with sessions. This main effect indicated that contributions were raised at the final session of each of the blocks (i.e., Sessions 4 and 8), presumably because group members were aware that a leader structure would be installed (in Session 5) or that the experiment would end (Session 8). Such time effects are not uncommon in social dilemma experiments with repeated trials (Komorita & Parks, 1994).

participants indeed contributed more ($M = 215.58$, $SD = 46.77$) than in the low-identification groups ($M = 187.95$, $SD = 59.82$). This effect was not further influenced by the absence or presence of a leader $F(1, 89) < 1$.

Moreover, a main effect was found for sessions, $F(1, 89) = 7.14$, $p < .01$, indicating that in the sessions with a leader the participants contributed more ($M = 209.92$, $SD = 59.60$) than in the sessions without a leader ($M = 192.71$, $SD = 55.14$).

It is important to note that this main effect was qualified by a significant interaction effect between sessions and leader type, $F(1, 89) = 6.45$, $p < .05$. To analyze this interaction more closely, we conducted separate analyses for the samples with an instrumental and relational leader to compare their contributions before and after the leader was introduced. Using the instrumental leader sample, this test revealed a significant effect for sessions, $F(1, 45) = 13.07$, $p = .001$. The means associated with this effect revealed that contributions rose after the instrumental leader was adopted (without vs. with leader: $M_s = 194.02$ vs. 227.28).

In contrast, for the sample with a relational leader no significant effect was found for sessions, $F(1, 44) < 1$. The means revealed that the contribution levels were indeed unaffected by the introduction of a relational leader (without vs. with leader: $M_s = 192.37$ vs. 193.22). These results show, consistent with Hypothesis 5a, that the appointment of an instrumental leader is generally more effective in enhancing contribution levels within groups than the appointment of a relational leader.

Our next hypothesis concerned the impact of group identification on the effectiveness of these leader types (Hypothesis 5b). Specifically, it was predicted that an instrumental leader would be most effective in raising contributions from low-identification groups, whereas in high-identification groups instrumental and relational leaders would be equally effective. Evidence for this hypothesis was provided by a significant three-way interaction between group identification, type of leader, and sessions, $F(1, 89) = 4.13$, $p < .05$. The patterns of contribution levels associated with this interaction are shown in Table 2.

To examine this interaction in more detail, we analyzed the contribution patterns for the without leader sessions and with leader sessions separately. First, as expected, a 2 (group identification) \times 2 (type of leader) ANOVA revealed no significant

interaction between identification and leader type for the without leader condition ($F < 1$; i.e., as there was no leader in these sessions, we did not expect these means to differ). Conversely, the analysis of the with leader condition did reveal a significant interaction between identification and leader type, $F(1, 89) = 4.99$, $p < .05$, which is in line with our prediction. The contribution patterns in the experimental conditions are shown in Table 2.

Simple effects comparisons on the mean contributions in the various with leader conditions showed that people in the low-identification groups contributed much more when monitored by an instrumental leader ($M = 228.03$) than by a relational leader ($M = 168.44$), $F(1, 46) = 10.35$, $p < .001$. In the high-identification groups, however, this tendency was absent, and participants in these groups contributed as much with a relational leader ($M = 218.02$) as they did with an instrumental leader ($M = 226.54$), $F(1, 43) < 1$. Moreover, a simple effects comparison between the mean contributions in the sessions with and without a leader revealed that an instrumental leader significantly enhanced contributions from both the high identifiers (without vs. with leader: $M_s = 209.77$ vs. 226.54 , $p < .01$) and the low identifiers (without vs. with leader: $M_s = 178.28$ vs. 228.03 , $p < .001$). Yet, a relational leader enhanced the contributions from high identifiers only (without vs. with leader: $M_s = 207.73$ vs. 218.02 , $p < .05$) and had no effect on the contributions from low identifiers (without vs. with leader: $M_s = 177.03$ vs. 168.44 , *ns*).

These findings extend and complement the results of Study 1. First, they replicate the positive effect of group identification on individual actions (i.e., Hypothesis 1). Furthermore, our results reveal that group members generally cooperate more with an instrumental rather than a relational leader (Hypothesis 5a). However, when group identification is high, a relational leader appears to be as effective in enforcing contributions as an instrumental leader (i.e., Hypothesis 5b).

Legitimacy of the leader as mediator. How did perceptions of the leader's legitimacy affect people's contribution decisions? To examine this, we conducted an analysis of covariance on the mean contribution score in the second block of sessions, including the full experimental design with the leader's legitimacy score as a covariate. This analysis revealed, first, a strong positive effect of the covariate ($\beta = .32$), $F(1, 88) = 11.25$, $p < .001$, on the average

Table 2
Contributions as a Result of Session, Type of Leader, and Group Identification

Group identification	Leader type	Session					
		Without leader		With leader		Overall	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Low	Instrumental	178.28 _a	49.83	228.03 _c	61.89	187.95	59.82
	Relational	177.03 _a	61.75	168.44 _a	66.35		
	<i>M</i>	177.66	55.79	198.23	64.12		
High	Instrumental	209.77 _b	50.33	226.54 _c	35.46	215.58	46.77
	Relational	207.73 _b	51.92	218.02 _c	50.17		
	<i>M</i>	208.77	50.54	222.38	42.99		
	Overall <i>M</i>	192.71	55.14	209.92	59.60		

Note. The range of possible contributions varies from 0 to 300 pence. Means with a different subscript differ significantly at $p < .05$.

contribution level, indicating that people contributed more to the extent that they considered the leader to be more legitimate.

Moreover, when the effect of the covariate was accounted for, the main effect of leader type—that is, in the original analysis, $F(1, 89) = 8.88, p < .01$ —gained in strength, $F(1, 88) = 15.73, p < .001$. This suggests that the relative effectiveness of an instrumental over a relational leader in raising the contribution level in groups was reduced by the fact that an instrumental leader was perceived to be less legitimate.

Effect of leader on self-esteem. Our final hypothesis addressed the effects of relational versus instrumental leaders on group members' self-esteem (Hypothesis 5c). On the basis of the group-value model (Tyler & Lind, 1992), it was expected that relational leaders would have a positive effect on people's self-esteem, particularly among group members with a high group identification.

To examine this, a 2 (group identification) $\times 2$ (type of leader) ANOVA was performed on the average self-esteem score. Consistent with Hypothesis 5c, this analysis revealed a significant interaction effect between identification and type of leader, $F(1, 89) = 4.47, p < .05$. A closer examination of the means (see Table 3) reveals that, in line with our prediction, the self-esteem of participants in the high-identification groups was higher with a relational ($M = 4.95, SD = 1.22$) than with an instrumental leader ($M = 4.51, SD = 0.94$), $t(45) = -1.48, p < .05$ (one-tailed).

Surprisingly, however, this effect was reversed in the low-identifying groups. Individuals in these groups exhibited a higher self-esteem with an instrumental leader ($M = 4.97, SD = 0.96$) than with a relational leader ($M = 4.42, SD = 0.94$), $t(48) = 1.73, p < .05$.

These results indicate that, in line with Hypothesis 5c, people's self-esteem is positively affected when they are supervised by a relational leader, but only if group identification is high. In contrast, if their group identification is low, people's self-esteem is boosted more by an instrumental leader than by a relational leader.

General Discussion

The current research used an experimental public goods task to explore the role of social identification processes in two interrelated forms of collective action in social dilemmas: (a) the selection of and (b) cooperation with a group leader.

The two studies presented replicated previous research on collective action in social dilemmas (e.g., Messick et al., 1983;

Samuelson et al., 1984; Yamagishi, 1986, 1988) by showing that individuals are more likely to adopt a leader when they expect the group to fail in producing the good by voluntary contributions from group members (Hypothesis 3). The current findings delineate, however, that outcome concerns do not tell the whole story about when groups engage in collective action, at least not when they can choose between various alternative leader structures. The current research suggests that, in the selection of different leader types, group members also consider their potential impact on the social relationships within the group.

Selection of Leaders

The findings of Study 1 revealed that in choosing between different leaders, individuals consistently preferred to adopt those with a legitimate power base. That is, group members preferred a democratic over an autocratic leader, an elected over an appointed leader, and a leader from inside over a leader from outside their group (i.e., Hypothesis 4a). How can we explain these preferences? In selecting a leader, group members may be concerned about the amount of influence they can exercise over the leader's decisions. Particularly in social dilemma situations, group members may be quite reluctant to give away control over their contributions, as this will harm their self-interest (i.e., noncontributing is the dominant behavioral option; Dawes, 1980; Komorita & Parks, 1994; Van Lange et al., 1992; Yamagishi, 1986). Rather than choosing an autocratic leader, group members may therefore prefer a democratic leader, whose decisions can be influenced, at least to some extent (i.e., decision control; Thibaut & Walker, 1975). Similarly, group members may consider it important to have a say in who will be assigned as leader to ensure that indeed the most appropriate person is appointed (Hollander & Julian, 1970).

The desire for control and autonomy might well explain preferences for democratic and elected leaders, but these motives are less likely to account for the preference of a leader from inside the group. To understand this, one has to consider various alternative functions of a group leader, perhaps the most important being to represent the group, promote group cohesion, and enhance relationships between members (i.e., relational vs. task aspects of leadership; Bass, 1990; P. M. Smith, 1996). Such relational needs are most likely to be fulfilled by leaders that group members can identify with—for example, because they share the norms and values of the group (French & Raven, 1959)—and are therefore considered to be representative of the group. Accordingly, group members' preference for legitimate leaders might also reflect the significance of their group identity.

Direct evidence for the importance of these relational concerns stems from the finding that a legitimate leader was particularly preferred when group membership was made salient (Hypothesis 4b). When group identification was high, individuals exhibited a stronger preference for adopting an internal (vs. external) and elected (vs. appointed) leader than when group identification was low. These findings are relevant, because they stress how important leaders may be in enhancing people's identification with their group. In the past, social identity theorists have been surprisingly quiet about the role of leadership in shaping social identities within groups (Hogg & Abrams, 1988; Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Some recent work,

Table 3
Self-Esteem Scores as a Result of Type of Leader and Group Identification

Group identification	Type of leader			
	Instrumental		Relational	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Low	4.97 _a	0.96	4.42 _b	0.94
High	4.51 _b	0.94	4.95 _a	1.22

Note. Higher scores indicate greater reported self-esteem. Means with a different subscript differ significantly at $p < .05$.

however, suggests that leaders play a role in promoting group identity provided, however, that they are regarded as representative or prototypical group members (i.e., self-categorization theory of leadership; Hains et al., 1997; Hogg, 1996; Hogg & Abrams, 1988). Our findings provide support for a prototypical model of leadership by showing that when group membership was made salient, individuals indeed preferred to adopt a representative group leader (i.e., an internal and elected leader).

It is good to note that the strength of group identification did not affect the preferences for a democratic over an autocratic leader. Across all groups there was, in fact, a general dislike of autocratic-style leaders. This finding corroborates previous social dilemma research (Rutte & Wilke, 1985; Samuelson, 1993) and is not inconsistent with the above reasoning, because it suggests that the impact of group identification on leader preferences is indeed primarily shaped by relational needs rather than instrumental or control-based needs. Even low-identifying group members would want to exercise some control over their leader's decisions, thus preferring a democratic leader. However, high-identifying group members also want leaders to symbolize the group and represent the group values, thus preferring elected and internal leaders.

Finally, that leader preferences in Study 1 were not further influenced by information about the group's previous success or failure to obtain the good (i.e., Hypothesis 4c) also suggests that relational concerns were perhaps more important than instrumental ones. Even when the group had previously failed to obtain the good, its members still preferred a democratic over an autocratic, an elected over an appointed, and an internal over an external leader. Particularly in the failure conditions, one might expect a preference for external and appointed (rather than internal and elected) leaders, because individuals may not regard their fellow group members as trustworthy enough to be granted leadership (Samuelson, 1991). Yet, such leader types may be lacking in legitimacy, because they are not chosen by group members.

Cooperation With Leaders

To further disentangle instrumental and relational motives underlying collective actions, we examined the influence of different leader types on the contributions of group members to a public good. Consistent with Hypothesis 5a, our findings revealed that contribution levels were raised when groups were managed by a leader who imposed fines on noncontributing group members (i.e., an instrumental leader) rather than by a leader who simply encouraged members to contribute voluntarily (i.e., a relational leader). More important, an instrumental leader was much more effective in enforcing contributions than a relational leader when group identification was low. Yet, when group identification was high, the difference in effectiveness of these leaders disappeared, and both leaders were found to increase group members' contributions (Hypothesis 5b).

How can we account for these findings? First, the overall effectiveness of an instrumental leader parallels the results of earlier research on the impact of coercive systems in public good dilemmas (Yamagishi, 1986, 1988; Yamagishi & Sato, 1986). Coercion might work, either because it provides a direct punishment for noncontributing behavior (i.e., counteracts a greed motive) or because it increases people's trust that their contribution will be reciprocated by others (i.e., counteracts a fear motive;

Yamagishi, 1986). Both motives, fear and greed, might explain why among low-identifying group members an instrumental leader was far more efficient than a relational leader. In low-identification groups individuals are indeed primarily focused on their personal welfare rather than the welfare of others or the group as a whole (Brewer, 1979; Brewer & Kramer, 1986; De Cremer & Van Vugt, in press; Hogg & Abrams, 1988). Accordingly, members of these groups might start to contribute only when it is in their direct self-interest to do so (i.e., under threat of a punishment). Alternatively, the adoption of an instrumental leader assures cooperative group members that their efforts will not be exploited by "selfish" others in the group (cf. structural-goal expectation theory; Yamagishi, 1986). Unfortunately, on the basis of the present findings we cannot tell which one of these explanations, greed manipulation or a greater trust in others' cooperation, accounts for the positive reaction of low identifiers to a coercive leader. Subsequent studies should include such measures to allow an understanding of the different psychological and behavioral responses to different leader types in social dilemmas.

Instrumental concerns are less likely to account for the contribution patterns obtained for high-identifying group members. They already contributed considerably more than low identifiers in the sessions before the introduction of a leader (i.e., more than 30 pence more on average). This finding replicates the result of Study 1 and is consistent with previous findings in the experimental dilemma literature (Brewer & Kramer, 1986; Kramer & Brewer, 1984). Yet, although the contribution level of high identifiers was quite high initially, and, in fact, exceeded a fair share of 200 pence, their contributions rose slightly, but significantly, once a leader-structure was implemented in their group. Moreover, a relational leader was found to have an impact similar to that of an instrumental leader in raising the contributions among high identifiers. This result is quite remarkable because, like all other participants in Study 2, high identifiers continued receiving negative feedback about the group's performance in providing the good; hence, their willingness to maintain and, to some extent, increase their cooperation under the supervision of a relational leader can be explained only by mechanisms that depart from their immediate self-interest.

The group-value model (Tyler et al., 1996; Tyler & Lind, 1992) sheds some light on this important result. According to this model, people derive information about their status within the group from the way they are treated by leaders and authorities. If group members are treated respectfully, this will add to their status position and, hence, improve their group affiliation. Similarly, in the present study a relational leader communicated to group members that they were respected members of the group and could be trusted to protect the group welfare. In the absence of any direct punishment, this may have persuaded them to keep on contributing despite the repeated group failure. That only high-identifying group members responded to these messages is not inconsistent with this interpretation. Theoretically, one would expect this status information to affect primarily people who regard their group membership as important (H. J. Smith & Tyler, 1997).

In further agreement with this notion is the fact that a relational leader positively influenced self-esteem among high-identifying group members. That their self-esteem was higher when supervised by a relational rather than an instrumental leader provides direct support for a claim derived from the group-value model that

relational concerns ("Am I trusted and treated with respect?") are indeed particularly important for high-identifying group members. Interestingly, the reverse pattern was found for low-identifying group members. They actually reported higher self-esteem when supervised by an instrumental leader. This finding suggests that they were indeed primarily interested in achieving good group outcomes and therefore felt more comfortable when supervised by a leader with the ability to punish "greedy" group members.

The above findings thus contribute to the validity of the group-value model. To our knowledge, this research provides the first experimental test of predictions derived from this theory. Previous evidence for the link among authority decisions, group identification, and support for authorities has been based primarily on cross-sectional and correlational findings (e.g., H. J. Smith & Tyler, 1997; Tyler & DeGoey, 1995; Tyler, DeGoey, & Smith, 1996). Hence, these studies provide a relatively weak basis for testing the causal relationships between key factors in the model. Our results demonstrate more rigorously that treatment by authorities affects how people respond to different authorities and evaluate themselves and their group membership. Furthermore, our research extends the group-value model by showing that treatment by leaders not only influences group members' perceptions about their leaders (Tyler & DeGoey, 1995) and themselves (Tyler, DeGoey, & Smith, 1996) but also directly affects group-oriented behaviors.

From a somewhat broader perspective, our findings are important because they delineate that the literature on leadership could be easily integrated in the domain of social dilemmas. Both literatures make a fundamental distinction between instrumental and relational concerns underlying people's motivations to cooperate. In leadership research a traditional dichotomy is made between two conflicting leader types: task versus relation-oriented leaders—the former focusing primarily on improving the group outcomes and the latter on maintaining viable social relationships within the group (Bass, 1990; Hollander, 1985; P. M. Smith, 1996). In social dilemmas, groups face a similar conflict between ensuring that everyone cooperates for the group's benefit, but, at the same time, providing group members some personal control and responsibility (Komorita & Parks, 1994; Tyler & Dawes, 1993; Van Lange et al., 1992). Our findings show that the adoption of a leader might provide a solution to this conflict, but only to the extent that the style of the leader matches group needs. In this regard, our results are quite consistent with a contingency approach to leadership (Fiedler, 1978; Vroom & Jago, 1978). Further research is needed to determine what leader styles are most successful in social dilemmas given certain other group or situational characteristics (e.g., group size, severity of crisis).

Limitations, Conclusions, and Implications

Before closing we should note various limitations of the current research. A first apparent limitation is that we examined the effects of two rather extreme leader types: a leader with coercive power and a leader whose power flows from building a positive relationship with the group. Outside the laboratory, these pure forms seldom appear, and most leaders usually display a hybrid of different power styles. The manipulation of these contrasting types, however, enabled us to disentangle instrumental and relational motives and therefore allowed us to assess the validity of

different models of collective action. Nevertheless, we believe that future research should address the effects of leaders with a mixture of different power bases. For example, a further study could assess whether the method of selection (i.e., elected vs. appointed) makes a difference in how effective instrumental and relational leaders are in promoting cooperation. Ideally, such a study should also include a leaderless group in the design. In the present study, each of the experimental groups was supervised by a leader during the second set of contribution sessions. As a result, we cannot be certain that the obtained shifts in contribution rates are indeed due to the introduction of the leader structures. This, however, should not affect the interpretation of the reported differences between the leader types and their differential effects on high- versus low-identifying group members (i.e., the interaction effects).

A second limitation of Study 2 is that group members received continuous negative feedback about their group performance, in both the four sessions before and the four sessions after the introduction of the leader. This was done both to provide a justification for the introduction of a leader and to investigate the influence of a leader on the contributions, independent of the leader's success in providing the group bonus. Yet, the systematic negative feedback group members received was perhaps not quite realistic, and ideally we should have manipulated the expectation of the group's success or failure in the same way as we did in Study 1. In this regard, however, it is remarkable that, despite the group's continuous failure, group members continued to cooperate with the leader (i.e., except when low-identifying group members were supervised by a relational leader). Perhaps this is due to the experimental situation, and the results may be quite different when leaders repeatedly fail to provide a highly valued group outcome. Indeed, outside the laboratory leaders or authorities may find it quite difficult to sustain cooperation from followers if they continue to disappoint by failing to provide a valued good for the group (e.g., failed attempts by union representatives to negotiate salaries).

Beyond these limitations, a potential strength of our research is also worth noting. The current research sheds a new light on the role of leaders in managing social dilemma problems. Contrary to earlier suggestions (e.g., Messick & Brewer, 1983; Samuelson & Messick, 1995), our research stresses that the adoption of a leader is not a panacea to social problems, as it will not automatically resolve the dilemma structure. Leaders may play a role in softening the dilemma for people, but their success depends on the match between their characteristics and those of the group or situation at hand. For example, in raising money for a community center there may be different campaign leaders required for different neighborhoods. In a strongly cohesive community, it may be sufficient to appoint a leader who simply encourages community members to contribute—for example, by emphasizing the importance of a center for their community. This leader, however, is not likely to be very effective in low-cohesive neighborhoods. In these communities, it will be more effective to appoint somebody who can actually impose threats on uncooperative members—for example, by denying them access to the center. Many of these smaller and larger social dilemmas in modern society will not be resolved without the implementation of some kind of leader or authority structure. It is therefore of the utmost importance to develop an understanding of how individuals evaluate these structures and under what conditions they are willing to cooperate with them.

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